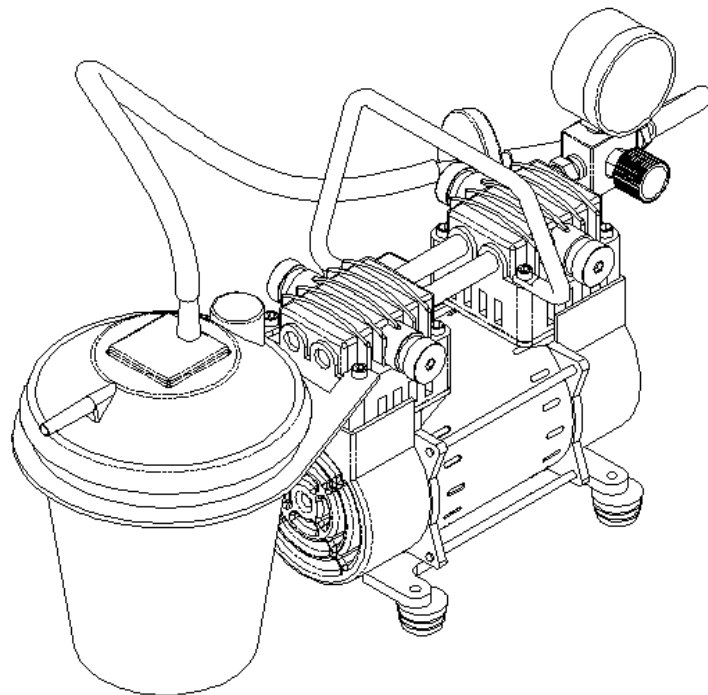




PIONEER

U601 ASPIRATOR USER'S MANUAL



Merits Health Products Co., Ltd.

**Read this manual before
operating Aspirator and
save for future reference.**

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0. IEC Symbols



Caution, Attention or Consult accompanying documents.



Alternating Current



Type BF Equipment



Power Off



Power On

1. Important Safeguards

- I When using electrical products, especially when children are present, basic safety precautions should always be followed.
- I READ ALL INSTRUCTIONS BEFORE USING.



DANGER

TO REDUCE THE RISK OF ELECTROCUTION:

- (1) Always unplug power of this product immediately after using.
- (2) Do not use this product in liquid nor place or store where it can fall or be pulled into liquid.
- (3) Do not reach for a product that has fallen into liquid. Unplug power immediately with appropriate electrical insulation.



WARNING

TO REDUCE THE RISK OF BURNS, ELECTROCUTION, FIRE OR INJURY TO PERSONS:

- (1) A product should be paid attention when plugged in.
- (2) Do not touch the surface of this product during or just after using because electrical products generate heat. Use handle whenever movement is needed.
- (3) Keep the power cord away from heated surfaces.
- (4) Never operate this product if
 - (a) It has a damaged cord or plug
 - (b) It is not work properly.
 - (c) It has been dropped into liquid or damaged.

Return this product to the dealer for more information to examine or repair.

- (5) Use this product in well-ventilated areas. Do not use this product outdoors or in a closed area where flammable or explosive liquid or vapors may exist.
- (6) Do not block the air openings or place it on a soft surface where the openings may be blocked. Never drop any objects into openings.
- (7) Never use while drowsy or sleepy.
- (8) Close supervision is needed when this product is used on, near children or invalids.
- (9) Use this product only for its intended use as described in the manual.
- (10) This product use oil-less technology. Do not use oil or grease on or near this device.
- (11) This product is thermally protected when the motor is overheated and can restart automatically when thermal protector resets as motor temperature gets lower.
- (12) Improper vacuum setting for operation may cause irritation or trauma. Please check the **5.3 Applicable Vacuum for Patients** for the details.



CAUTION

FEDERAL LAW RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A PHYSICIAN.

RISK OF ELECTRICAL SHOCK. DO NOT DISASSEMBLE ANY PARTS OF THIS PRODUCT. IF SERVICING IS NEEDED, CONTACT YOUR DEALER FOR MORE INFORMATION.

2. Introduction

The Merits Pioneer U601 Series Aspirator operates using standard AC Power from a wall outlet. This device consists of a motor-driven oil-less dual piston pump, vacuum regulation components and collection system. The product has dual fuses to offer high quality safety protection when malfunction or incorrect operation.

The unit is to be used to remove bodily fluids from the patients' airway or respiratory support system.

3. Specifications

Electrical Requirements	115VAC $\pm$ 10%(126VAC/100VAC), 60Hz	230VAC $\pm$ 10%(207VAC/253VAC), 50Hz
Pump Type	Oil-less Dual Piston	
Motor Type	AC Inductive Motor	
Rated Current	<1.2A	<0.6A
Fuse	4A /250VAC Φ 5mm x 20mm UL/CSA	2A /250VAC Φ 5mm x 20mm VDE
Maximum Vacuum	550mmHg @ Sea Level	
Flow Rate	33LPM Free Flow	30LPM Free Flow
Sound Level	57dB(A) Average	
Dimensions (H x W x D)	9.1"x 16.1" x 7.5" (23cm x 41cm x 19cm)	
Weight	11.3 lbs (5.1 Kg)	
Operation Temperature and Humidity	50°F (10°C)~104°F(40°C)/RH <95%(non-condensing)	
Storage/Transport Temperature and Humidity	-4°F (-20°C)~140°F(60°C) /RH <95%(non-condensing)	
Hydrostatical Pressure	860hPa~1060hPa	

(1). The Specifications subject to change without notice.

(2). This product complies with the following standards:

Medical Equipment Electrical Safety: IEC60601-1:1988 including A1:1991 and A2:1995

Medical Equipment Electromagnetic Compatibility: IEC 60601-1-2:2001

(3). Classification

Type of protection against electric shock: Class I Equipment

Degree of protection against electric shock: Type BF Equipment

Degree of protection against harmful ingress of water: Ordinary Equipment

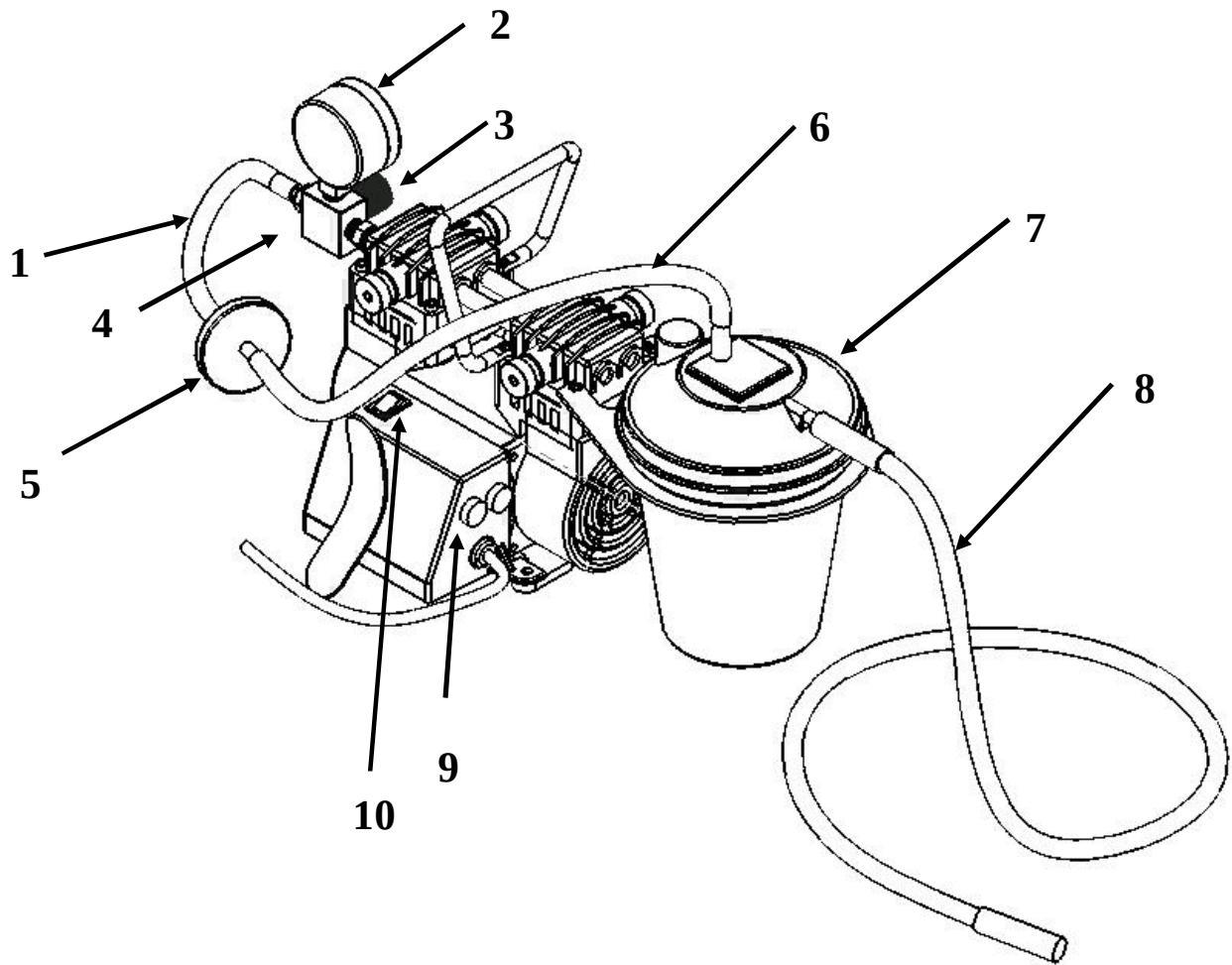
ISO 10079 Classification: High vacuum/high flow

Equipment not suitable for use in presence of a FLAMMABLE ANAESTHETIC MIXTURE WITH AIR OR WITH OXYGEN OR NITROUS OXIDE.

(4). Canister

Recommended canister capacity: 800mL with over flow shut-off protection

4. Description



1. 4.5" Connection Tube
2. Vacuum Gauge
3. Vacuum Regulator Knob
4. Gauge Seat
5. Bacteria filter
6. 16" Connection Tube
7. Canister
8. 6' Patient Tube
9. Fuse Holders
10. Power Switch

5. Operation

5.1 Grounding Instructions

In order to protect the users, this product should be grounded while in usage. When a failure of electrical insulation occurs, the grounding wire will provide a short circuit to reduce the risk of electrical shock. This product is equipped with a cord having a grounding wire and grounding pin. This pin should be grounded correctly by plugged into a grounded outlet. Removing the pin will disable the protection and may cause the risk of electrical shock.

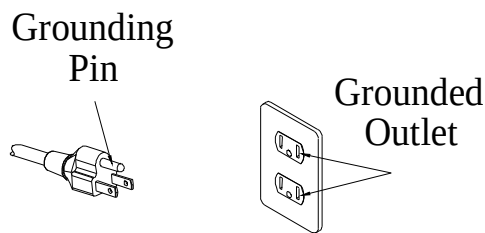


Figure A

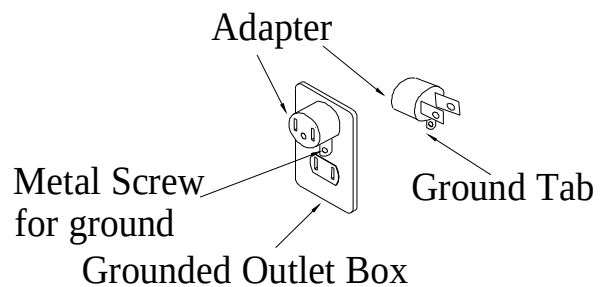


Figure B

This product is always equipped with a plug having grounding pin. Refer to figure A , make sure the outlet has a grounded hole. Connect the cord plug to the outlet. If a properly grounded outlet in figure A is not available, the adapter in figure B should be used. The ground tab extending from the adapter must be connected to a permanent ground, such as a properly grounded outlet box cover , with a metal screw fixed. The permanent ground should be checked or installed by a qualified electrician.



IMPROPER USE OF THE GROUNGED PLUG CAN RESULT IN A RISK OF ELECTRICAL SHOCK. DO NOT CONNECT THE GROUNDING WIRE TO EITHER FLAT BLADE WHEN USING AN ADAPTER. CONTACT A QUALIFIED ELECTRICIAN IF ANY DOUBT.

5.2 Set-Up

- (1) Refer to the Description to become familiar with this product.
- (2) Connect either end of 4.5” connection tube to connect block then connect the other end to the bacteria filter.

NOTICE! Follow the direction sign on the lateral of bacteria filter.

Refer to 7.1 Tube and Bacteria Filter Replacement.

- (3) Connect 16” connection tube to bacteria filter and canister lid where labeled <Vacuum>.
- (4) The 6’ Patient Tube should be connected to the canister lid where labeled <patient>
- (5) Make sure all connections are secure and have no leakage before using.

5.3 Applicable Vacuum for Patients

The suggested applicable vacuum for adults is below 200mmHg, 80~100mmHg for children. The device is not suggested for infants use. Set the proper vacuum before suction therapy process.

5.4 Operation



WARNING

PROPER USING THIS PRODUCT IS NECESSARY TO AVOID PHYSICAL HARM. THIS PRODUCT SHOULD BE USED UNLESS THE OPERATOR HAS BEEN INSTRUCTED BY A PHYSICIAN OR OTHER QUALIFIED HEALTH CARE PROFESSIONAL.

- (1) Check the power switch. It should be OFF.
- (2) You should read the GROUNDING INSTRUCTIONS before connect the power cord. Plug the power cord into grounded outlet which is in the voltage range of specification.
- (3) Make sure the length of 16” tube from the canister to the bacteria filter is dry and clear.

- (4) Turn ON the power switch.
- (5) Use vacuum control knob to adjust the vacuum setting directed by the Physician or Qualified Health Care Professional. Check the degree of vacuum by blocking the opening of 6' patient tube.
- (6) The pump now is ready for use.



CAUTION

IF FLUID HAD BEEN SUCKED INTO THE VACUUM PUMP, SHUT-OFF THE POWER IMMEDIATELY, SEND THE DEVICE BACK TO THE DEALER FOR SERVICE. DO NOT ATTEMPT TO USE THE DEVICE.



CAUTION

IF FLUID IN THE CANISTER REACH A LEVEL TO ACTIVATE THE OVER FLOW SHUT-OFF VALE, THE PATIENT'S TUBE WILL STOP VACUUM AUTOMATICALLY. PLEASE STOP OPERATION AND POWER OFF THE DEVICE. EMPTY AND CLEAN THE CANISTER.(See 6.3 canister)

6. Cleaning

6.1 Unit Cleaning:

- (a) Switch off the pump and disconnect it from the external power source.
- (b) Wipe the unit with a clean soft dry cloth.



WARNING

DO NOT SUBMERGE VACUUM PUMP IN LIQUID AS THIS RESULT IN DAMAGE TO THE VACUUM PUMP.

6.2 Disinfection:

If contamination concerns arise, users may perform the following processes after cleaning the unit to disinfect the. Clean the cabinet with either a common chemical disinfectant or a bleach solution* and allow it to air dry. For the bleach solution, wear eye and skin protection to prevent exposure to the chlorine.

*Note: *Make the bleach solution a 1:100 dilution of 5~6% sodium hypochlorite. Mix one part household bleach (e.g... Clorox) with 99 parts cold tap water. To measure the solution easily, take 1/4 cup of household bleach, and mix it with a gallon of cold tap water. Allow the mixture to sit on potentially contaminated surfaces for 10 minutes.*

6.3 Canister:

EMPTY and CLEANING:

1. Shut off power switch and allow vacuum to decrease.
2. The canister can be moved out of the holder to be emptied.

NOTE– Canister should be emptied after each use.

3. Canister should be thoroughly cleaned after each use by the following methods:
4. Wash in a hot water and rinse with clean, hot tap water. Then wash in one part vinegar to three parts hot water solution. Rinse with hot tap water and air dry.

7. Maintenance

7.1 Tube and Bacteria Filter Replacement

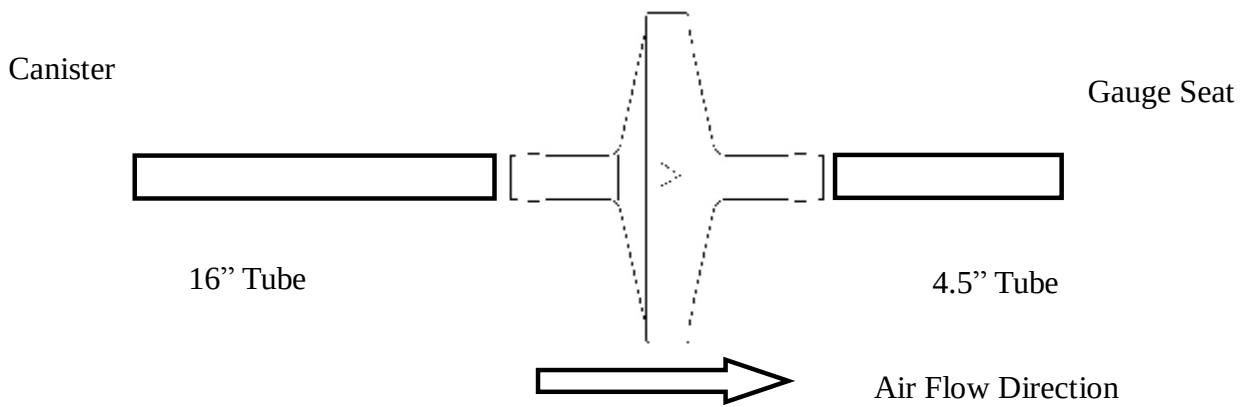


CAUTION

THE TUBING SHOULD BE CHANGED AFTER EACH PATIENT USE OR ON A MONTHLY BASIS IF THE SAME PATIENT USES UNIT.

THE HYDROPHOBIC BACTERIA FILTER SHOULD BE CHANGED AFTER EACH PATIENT USE OR ON A MONTHLY BASIS IF THE SAME PATIENT USES UNIT.

Disconnect the bacteria filter, 4.5” and 16” connection tubes. Use new ones to connect the tubes as the direction shown on the filter lateral side. (See figure below)



7.2 Preventive Maintenance

- (1) The preventive maintenance should be performed at least once each year.
- (2) Inspect and clean the external surfaces.
- (3) Check the vacuum regulator knob. If loose, change the o-ring inside gauge seat.
- (4) Verify the vacuum gauge.
- (5) Inspect the power cord and plug. Replace a new power cord if worn-out or damaged.



CAUTION

CHANGING OR REPLACING A NEW COMPONENT SHOULD BE PERFORMED BY A QUALIFIED PROFESSIONAL. CONTACT THE DEALER IF NECESSARY.

7.3 Replace Fuses

Two fuse holders on the electrical box offer over current protection. If the motor can not start when the power cord is plugged into outlet, check the fuses. If the fuse had been broken, replace a new 4 A /250VAC Φ 5mm x 20mm CSA or UL approved fuse for 115VAC/60Hz type and 2A /250VAC Φ 5mm x 20mm VDE approved fuse for 230VAC/50Hz type.

8. Troubleshooting

Use the table below to find out the possible solutions if any problems when using this product before you contact the dealer.

SYMPTOM	PROBABLE CAUSE	SOLUTION
Switch ON but unit does not operate.	1. Power Cord does not plugged in an outlet. 2. No power at outlet. 3. Fuses had burnt out.	1. Plug the power cord into an outlet. 2. Use a live outlet. 3. Replace new fuses. See "7.3 Replace Fuses".
Unit runs but no or low vacuum.	1. Tubing is not connecting tightly. 2. Leakage occurs in canister or tubing. 3. Air flow blocked by dirty bacteria filter.	1. Connect the tubes tightly. 2. Replace the crack canister or the leaking tube. 3. Replace a new bacteria filter. See "7.1 Tube and Bacteria Filter Replacement".
Unit was running but stops abruptly.	1. Fuses have burnt out. 2. Thermally protected	1. Replace new fuses. See "7.3 Replace Fuses". 2. Wait for 5~10min to restart.



CAUTION

IF FLUID HAD BEEN SUCKED INTO THE VACUUM PUMP, SHUT-OFF THE POWER IMMEDIATELY, SEND THE DEVICE BACK TO THE DEALER FOR SERVICE. DO NOT ATTEMPT TO USE THE DEVICE.

9. Warranty

Merits Health Products Co., Ltd. warrants the Pioneer Aspirator to be free from defective workmanship and materials for a period of 1 year from the date of purchase. Check with your dealer for more details. This warranty is limited to the original purchaser of the compressor. Any defective part or assembly will be repaired or replaced, at the sole discretion and determination of Merits Health Products Co., Ltd., if the unit has been properly operated during the warranty period. Normal maintenance items and disposable components are not covered by this warranty. Shipping charges, if any, shall be paid by the purchaser.

Note: There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to the duration of the express limited warranty and to the extent permitted by law and all implied warranties are excluded. This warranty does not cover providing a loaner pump, compensating for costs incurred for pump rental, or labor costs incurred in repairing or replacing defective part(s).



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CE Marked For Model

U601 (Europe)
230V~, 50Hz



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